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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/588,544

08/07/2006

Toshiaki Kurachi

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EXAMINER

CHEN, JIANZI

ART UNIT

PAPER NUMBER

2821

MAIL DATE

DELIVERY MODE

10/03/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/588,544 | <b>Applicant(s)</b><br>KURACHI ET AL. |  |
|                              | <b>Examiner</b><br>Jianzi Chen       | <b>Art Unit</b><br>2821               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/07/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Drawings*

Figures 10 A, 10B, and 11 should be designated by a legend such as -- Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

**Claims 1-7** are rejected under 35 U.S.C. 102 (a) as being anticipated by Noda WO Publication No. 2005067353 A1.

**As to claim 1**, Noda discloses a dielectric barrier discharge lamp lighting device for driving a dielectric barrier discharge lamp (abstract) having an inner electrode and an external electrode (pair of electrodes as shown in fig.1, it is well

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know in the art of the circuitry, the electrodes could be one inner , the other one is external in order to apply the lamp in a various situation), comprising:  
a transformer (32 fig.4 or 37, fig.5) that includes a primary coil (32b) and a secondary coil (32a), and supplies a driving voltage to the dielectric barrier discharge lamp from the secondary coil; and  
a driving circuit (31, fig.5) that controls an input voltage to the transformer to supply the driving voltage with a driving frequency  $f_d$  (high frequency, abstract) to the dielectric barrier discharge lamp (19);  
wherein a self-resonant frequency  $f_r$  (resonance frequency) of the secondary coil (32a), which is measured with the primary coil of the transformer being open (page 3, section 40, the inductance is measured when 32a is not connected), is equal to the driving frequency  $f_d$  or a frequency in the vicinity of the driving frequency  $f_d$  (fig.3, page 3, section 41).

**As to claim 2**, the dielectric barrier discharge lamp lighting device according to claim 1, Noda further discloses wherein the self-resonant frequency  $f_r$  is set to satisfy  $0.9f_d \leq f_r \leq 1.3f_d$  (page 3, section 41).

**As to claim 3**, the dielectric barrier discharge lamp lighting device according to claim 1, Noda further discloses wherein the self-resonant frequency  $f_r$  is set to satisfy  $0.95f_d \leq f_r \leq 1.25f_d$  (page 3, section 41).

**As to claim 4**, the dielectric barrier discharge lamp lighting device

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according to claim 1, Noda further discloses wherein the self-resonant frequency  $f_r$  is set to satisfy  $1.0f_d \leq f_r \leq 1.2f_d$  (page 3, section 41).

**As to claim 5**, the dielectric barrier discharge lamp lighting device according to claim 1, Noda further discloses wherein the driving voltage is a voltage having a substantially rectangular waveform (square wave, page 4, section 43).

**As to claim 6**, the dielectric barrier discharge lamp lighting device according to claim 1, Noda further discloses wherein the driving circuit includes a push-pull inverter (page 4, section 50).

**As to claim 7**, the dielectric barrier discharge lamp lighting device according to claim 1, Noda further discloses wherein the driving circuit includes a half-bridge inverter (page 4, section 50).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jianzi Chen whose telephone number is 5712705292. The examiner can normally be reached on Monday through Thursday 10:00- 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 5712721662. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jianzi Chen/  
Examiner, Art Unit 2821

/Douglas W Owens/  
Supervisory Patent Examiner, Art Unit 2821  
September 27, 2008